APPENDIX MM:

Indian Health Service 2011 Sanitary Survey

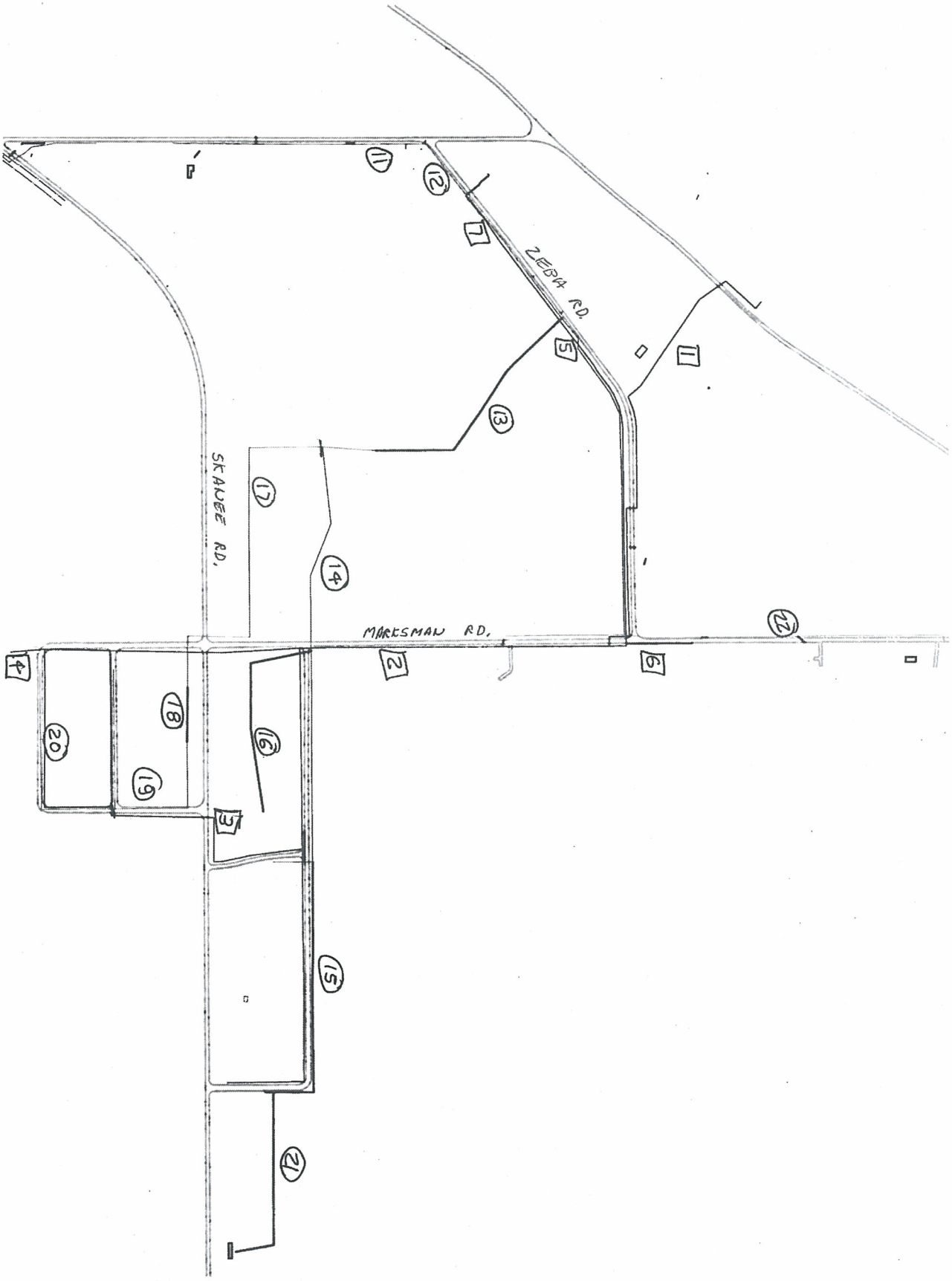
KEWEENAW BAY TOTALS

	6" WATER MAIN L=
1	2516
2	2632
3	3560
4	176
5	4950
6	341
7	326
	0
	0
TOTAL	**14501**

SEWER SYSTEM

	8" SEWER L=		3" SEWER L=		3" F.M. SEWER L=
11	3622	21	**987**	22	**1668**
12	1229				
13	1297				
14	2657				
15	1435				
16	1091				
17	1945				
18	277				
19	1443				
20	1113				
	0				
TOTAL	**16109**				

BREWERY-VUK 8" SEWER	L=
	7068
ABOVE TOTAL	16109
GRAND TOTAL	**23177**


ZEDA RD.
SKANEE RD.
MARKSMAN RD.
1
2
3
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5
6
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10
11
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21
22

DEPARTMENT OF HEALTH HUMAN SERVICES

Public Health Service

Indian Health Service
9A South Brown Street
Rhinelander, Wisconsin 54501-3450
715-365-5145
FAX: 715-365-5113

Mr. Warren Chris Swartz, President
Keweenaw Bay Tribal Council
107 Beartown Rd
Baraga MI 49908

Dear President Swartz,

On the dates indicated below the Indian Health Service conducted annual sanitary surveys of the community water and/or wastewater systems. The individuals that participated in each survey as well as suggestions that are offered for your consideration are presented below. The individual rating based on the condition of the facilities is also presented for each system. The basis for this rating score is described in the table presented at the end of this letter.

In addition, the Bemidji Area IHS is implementing a new methodology that will be used to determine the Operation and Maintenance (O&M) score. The score determined from this new methodology will be applied to all current and new projects included in the 2012 Sanitation Deficiency System (SDS) submittal cycle. The new methodology focuses on the health of the utility rather than the condition of each facility and is based on standard templates that have been developed nationally within IHS. The proposed changes were described in detail in a letter sent to the Tribal Chairperson in February 2011. The O&M scores calculated based on this new methodology that will be used during the 2012 SDS cycle are as follows:

O&M Score for Water Projects: 12 (Max 16 points)
O&M Score for Wastewater Projects: 12 (Max 16 points)
O&M Score for Solid Waste Projects: NA (Max 16 points)

The scores determined from this new methodology replace the average system rating that was previously used as the “O & M Capability " factor for projects listed on the SDS priority list.

Water System(s)

Zeba

PWSID#: 55293302

SYSTEM RATING: 14

SURVEY DATE: 5/25/2011

Surveyor Names: Arlan Friisvall of the Keweenaw Bay Maintenance Department and Brian Willoughby and Shane Hoffmann of the Indian Health Service

CRecommend installing a screen or flap gate on the overflow pipe to address the EPA Potential Significant Deficiency.

Recommend repairing the fence around the stand pipe.

Recommend repairing the insulation, exterior coating system and the fence for the standpipe.

Recommend posting chemical placards on the exterior of the building to alert fire/rescue personnel of the chemical hazards contained within the building.

Recommend repairing the inoperable hydrant and the leaking hydrant.

Recommend reading the residential and commercial water meters on a monthly basis and analyze the data to calculate water loss in the system.

Recommend installing an eyewash/emergency shower with tempered water.

Kawbawgam Road

PWSID#: 55293303

SYSTEM RATING: 14

SURVEY DATE: 5/25/2011

Surveyor Names: Mark VanLinden Ojibwe Housing Authority Maintenance and Brian Willoughby and Shane Hoffmann of the Indian Health Service

Recommend installing a sealed and vented cap for Well #2.

Recommend installing smooth bore sample taps on each well line at a minimum of 8-inches above the floor.

Recommend construction of a suitable concrete pad or the replacement of Well #1.

Recommend correcting the potential cross connection in the backwash piping.

Recommend sampling the iron filter media to determine the "health" of the iron filter.

Recommend installing an eyewash/emergency shower with tempered water.

Recommend repairing the inoperable hydrant.

Recommend installing a safety cable/chain for the chemical feed injector.

Recommend posting chemical placards on the exterior of the building to alert fire/rescue personnel of the chemical hazards contained within the building.

Wastewater System(s)

Zeba

NPDES#: NA

SYSTEM RATING: 14

SURVEY DATE: 5/25/2011

Surveyor Names: Arlan Friisvall of the Keweenaw Bay Maintenance Department and Drian Willoughby and Shane Hoffmann of the Indian Health Service

Recommend labeling the wet well and valve vault as confined spaces. Consider doing this by making a stencil and painting on the message to reduce cost.

Recommend troubleshooting and repairing the controller for the lift station pumps.

Recommend contracting a local septic hauler to stop by the lift station and clean the trash basket on reguler basis.

Each system rating describes the system condition based on the following table. This rating is used for informational purposes only. As indicated above the O&M Capability factor used in SDS is no longer based on the individual system ratings.

Rating	Condition
	If Significant components of the facility:
0.0	have failed, are inoperable and the system does pose a health hazard
2.0	have failed, are inoperable and the system may pose a health hazard.
4.0	may be close to failure and could pose a health hazard.
7.0	may be close to failure and would not pose a health hazard.
	If the System:
9.0	requires major maintenance but significant components continue to operate. The system could eventually pose a health hazard if the major maintenance items continue to be ignored.
11.0	requires major maintenance but significant components continue to operate. The system would not eventually pose a health hazard if the major maintenance items continue to be ignored
12.0	receives routine maintenance but not through a written scheduled maintenance plan/program. However, there is some amount of routine maintenance that is not being performed regularly
14.0	receives most of the routine maintenance through a written scheduled maintenance program. However, some routine maintenance is not being performed
16.0	is in excellent condition.

The following are examples of conditions that define the terms Significant, Major, and Routine.

SIGNIFICANT:

hand operated controls do not function; the system is not meeting minimum needs due to inoperable components; wastewater is overflowing; a lift station is not operating; chlorine, fluoride or other chemical feed equipment is significantly overfeeding chemical; building or tank structural damage threatens the integrity of the system.

MAJOR:

automatic controls do not function; system is not meeting peak needs due to inoperable components; water or sewage lift station pumps are not operating; chlorine, fluoride or other chemical feed equipment is not operating properly; building or tank structural damage (including tank repainting) exists but does not threaten the immediate integrity of the item; fire hydrants or critical valves are not operational.

ROUTINE:

Flush hydrants or non-critical valves are not operational; flushing, grounds maintenance, painting, or general building and lift station maintenance is required.

A copy of this report has been sent to your principle operator and the information in the letter shared with the staff of the IHS Office of Environmental Health and Engineering. A copy of the report will also be provided to the United States Environmental Protection Agency, Region Five Office to assist with compliance under the Ground Water Rule (unless we have been directed otherwise) and to help identify potential EPA funding opportunities. If you have any questions regarding these suggestions feel free to contact your staff members or me at 715-365-5129.

Thank you for allowing us to provide these services and we look forward to providing these services to you in the future.

Sincerely,

Digitally signed by Shane Hoffmann
Date: 2011.10.20 13:21:22 -05'00'

Shane Hoffmann, P.E.
Indian Health Service
Tribal Utility Consultant

Attachments:

O&M Evaluation Score Sheets
Letter – Proposed Changes to SDS O&M Scoring

Indian Health Service
Sanitation Deficiency System – Operation & Maintenance Scoring

WATER SUPPLY

TRIBE:	SCORED BY:	DATE: (mm/dd/yy)
Keweenaw Bay	Shane Hoffmann	10/19/11

OPERATION (Maximum points possible = (15)

	Points*
A. The operators have the appropriate certification level for their PWS (Max. points =2)	1
B. Preventive maintenance is performed with a written schedule and records of completion (Max. points =2)	1
C. Records are kept on all meters, pumping hours, etc. and analyzed (Max. points =2)	1
D. Sufficient repair parts, tools, & equipment to maintain water production are on hand (Max. points =1)	1
E. A safety program is in place, with training and equipment provided (Max. points =1)	1
F. Operators attended at least 10 hours of training during last year (Max. points =1)	1
G. Accurate and updated as built/system maps available, maintained, & properly stored (Max. points = 4)	2
H. Treatment facilities, well heads, and storage tanks secure (Max. points =2)	2
Subtotal	10

COMPLIANCE (Maximum points possible = 12)

A. PWSs were in compliance for monitoring during the last year (Max. points = 10)	8
B. The tribal utility organization participates with IHS and EPA in sanitation facility surveys and capacity development and corrects noted deficiencies (Max. points = 2)	2
Subtotal	10

BUDGET & ORGANIZATION (Maximum points possible = 13)

A. Written rules and regulations governing the O&M of the PWS have been developed, approved, and enforced (Max. points =2)	1
B. A budget is prepared and tracked on a regular basis (Max. points =1)	1
C. The user fee structure is implemented (Max. points = 8)	6
D. Written emergency response plan in place (Max. points = 2)	1
Subtotal	9

TOTAL POINTS	29
ADJUSTED SCORE (Total Points X 0.40)	12

***see WATER SUPPLY O&M SCORING INSTRUCTIONS**

Indian Health Service
Sanitation Deficiency System – Operation & Maintenance Scoring

WATER SUPPLY - O&M SCORING INSTRUCTIONS

OPERATION

A. The operators have the appropriate certification level for their PWS	
>1 certified operator	2
1 certified operator	1
Does not have a certified operator	0
B. Preventive maintenance is performed with a written schedule and records of completion	
Fully executed preventive maintenance program	2
Does not have a preventive maintenance program	0
C. Records are kept on all meters, pumping hours, etc. and analyzed	
Operators keep and analyze records	2
No records are kept	0
D. Sufficient repair parts, tools, and equipment to maintain water production are on hand	
Majority of necessary parts, tools, and equipment on hand	1
Minimal or no parts	0
E. A safety program is in place, with training and equipment provided	
Operators are trained and use safety equipment	1
Operators lack safety training and equipment	0
F. Operators attended at least 10 hours of training during the last year	
1 operator attended 10 hours of training	1
Operators did not attend 10 hours of training	0
G. Accurate and updated as built/system maps available, maintained, & properly stored	
Comprehensive set of as-builts maintained and easily accessed	4
As-builts for 50% of facilities are maintained and easily accessed	2
No as-builts maintained	0
H. Treatment facilities, well heads, and storage tanks secure	
Treatment facilities are fenced and well head and storage tank access secured	2
Treatment facilities are not fenced and well head and tank access is not secured	0

COMPLIANCE

A. PWSs were in compliance for monitoring during the last year	
Zero notices of non-compliance	10
1 notice of non-compliance with appropriate response	5
2 or more notices of non-compliance	0
B. The tribal utility organization participates with IHS and EPA in sanitation facility surveys and capacity development and corrects noted deficiencies	
Participated and corrected all deficiencies	2
Did not participate or correct deficiencies	0

BUDGET & ORGANIZATION

A. Written rules and regulations governing the O&M of the PWS have been developed, approved, and enforced	
Ordinances are enforced	2
No ordinances or not enforced	0
B. A budget report is prepared and tracked on a regular basis	
Reports are prepared to identify potential issues	1
Reports are not generated	0

WATER SUPPLY - O&M SCORING INSTRUCTIONS

C. The user fee structure is implemented	
Fee structure is implemented with ≥ 50%of fees collected	8
Fee structure is implemented with < 50%of fees collected	4
No fee structure	0
D. Written emergency response plan in place	
Written emergency response plan in place	2
No written emergency response plan	0

Indian Health Service
Sanitation Deficiency System – Operation & Maintenance Scoring

SEWAGE TREATMENT

TRIBE:	SCORED BY:	DATE: (mm/dd/yy)
Keweenaw Bay	Shane Hoffmann	10/19/11

OPERATION (Maximum points possible = 20)

	Points*
A. The operators have the appropriate certification level for their wastewater system (Max. points = 3)	0
B. Preventive maintenance is performed with a written schedule and records of completion (Max. points = 3)	1
C. Records are kept on all, pumping hours, pump starts, etc. and analyzed (Max. points = 2)	1
D. Sufficient repair parts, tools, & equipment to maintain sewage collection / treatment are on hand (Max. points = 2)	2
E. A safety program is in place, with training and equipment provided (Max. points = 2)	2
F. Operators attended at least 10 hours of training during last year (Max. points =2)	2
G. Accurate and updated as built/system maps available, maintained, & properly stored (Max. points = 4)	2
H. Sewage facilities are secure (Max. points = 2)	2
Subtotal	12

COMPLIANCE (Maximum points possible = 6)

A. Treatment facility discharges were compliant during the last year (Max. points = 4)	4
B. The tribal utility organization participates with IHS and EPA in sanitation facility surveys and capacity development and corrects noted deficiencies (Max. points = 2)	2
Subtotal	6

BUDGET & ORGANIZATION (Maximum points possible = 16)

A. Written rules and regulations governing the O&M of the wastewater system have been developed, approved, and enforced (Max. points = 3)	3
B. A budget is report is prepared and tracked on a regular basis (Max. points = 3)	3
C. The user fee structure is implemented (Max. points = 8)	6
D. Written emergency response plan in place (Max. points = 2)	1
Subtotal	13

TOTAL POINTS	31
ADJUSTED SCORE (Total Points X 0.381)	12

***see SEWAGE TREATMENT O&M SCORING INSTRUCTIONS**

Indian Health Service
Sanitation Deficiency System – Operation & Maintenance Scoring

SEWAGE TREATMENT - O&M SCORING INSTRUCTIONS

OPERATION

A. The operators have the appropriate certification level for their wastewater system	
>1 certified operator	3
1 certified operator	2
Does not have a certified operator	0
B. Preventive maintenance is performed with a written schedule and records of completion	
Fully executed preventive maintenance program	3
Does not have, or fully execute a preventive maintenance program	0
C. Records are kept on all pumping hours, pump starts, etc. and analyzed	
Operators keep and analyze records	2
No records are kept	0
D. Sufficient repair parts to maintain sewage collection / treatment are on hand	
Repair parts on hand	2
No repair parts on hand	0
E. A safety program is in place, with training and equipment provided	
Operators are trained and use safety equipment	2
Operators lack safety training and equipment	0
F. Operators attended at least 10 hours of training during the last year	
1 operator attended 10 hours of training	2
Operator(s) did not attend 10 hours of training	0
G. Accurate and updated as built/system maps available, maintained, & properly stored	
Comprehensive set of as-builts maintained and easily accessed	4
As-builts for 50% of facilities are maintained and easily accessed	2
No as-builts maintained	0
H. Sewage facilities are secure	
Treatment facility fenced, lift station and appurtenances secured, and signage evident	2
Treatment facility not fenced, lift station not secured, and no signage	0

COMPLIANCE

A. Treatment facility discharges were compliant during the last year	
Zero occurrences of non-compliance	4
1 occurrence/notice of non-compliance with appropriate response	2
2 or more occurrences/notices of non-compliance	0
B. The tribal utility organization participates with IHS and EPA in sanitation facility surveys and capacity development and corrects noted deficiencies	
Participated and corrected all deficiencies	2
Did not participate or correct deficiencies	0

BUDGET & ORGANIZATION

A. Written rules and regulations governing the O&M of the wastewater system have been developed, approved, and enforced	
Ordinances are enforced	3
No ordinances or not enforced	0

SEWAGE TREATMENT - O&M SCORING INSTRUCTIONS

B. A budget report is prepared and tracked on a regular basis	
Reports are prepared to identify potential issues	3
Reports are not generated	0
C. The user fee structure is implemented	
Fee structure is implemented with ≥ 50%of fees collected	8
Fee structure is implemented with < 50%of fees collected	4
No fee structure	0
D. Written emergency response plan in place	
Written emergency response plan in place	2
No emergency response plan	0

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Bemidji Area
Indian Health Service
522 Minnesota Ave.
Bemidji, MN 56601

OUR REFERENCE: Office of Environmental Health and Engineering

Honorable Warren C. Swartz Jr., President
Keweenaw Bay Tribal Community
16429 Beartown Road
Baraga, MI 49908

Subject: Proposed Changes to SDS Operation & Maintenance Scoring

Dear President Swartz Jr.:

The Bemidji Area Indian Health Service (IHS), Office of Environmental Health and Engineering (OEHE) is sending you this correspondence to inform you of proposed changes in the methodology used by the Indian Health Service to assign the Operation and Maintenance (O&M) Scores in the IHS Sanitation Deficiency System (SDS).

The 1988 Amendment to the Indian Health Care Improvement Act (IHCIA), P. L. 94-437 requires that IHS maintain an inventory of sanitation deficiencies for new and existing Native American homes and communities; to prioritize those deficiencies for funding (proposed projects); and to annually report them to Congress. As part of the sanitation deficiency system (SDS) process, IHS has conducted annual surveys of community water and wastewater infrastructure in order to assist in determining the operation and maintenance scoring factor within SDS. These surveys also provide observations and suggestions for improving and maintaining the facilities in good working condition in order to help protect the health and well being of customers that rely on these systems and to maximize the useful life of the facilities.

Over the past several years a workgroup of IHS O&M coordinators representing each of the twelve (12) IHS Areas has been working to develop a standardized rating tool to be used in determining the O&M score that is used within the SDS. As a result of these efforts a recommended set of scoring templates was finalized. Each of the IHS Areas has been working to implement the new scoring methodology. The Bemidji Area IHS, Division of Sanitation Facilities Construction (DSFC) is proposing to implement these new scoring templates during the 2011 O&M surveys. However, prior to doing so we would like to solicit feedback from Bemidji Area Tribes regarding any concerns related to implementation of the new scoring methodology.

The current methodology has been utilized for many years and involves conducting physical surveys of each utility system. Information about each system is compiled in a database and suggestions are made regarding the condition and maintenance needs of major system components. Based on these observations an O&M score is assigned to each system. The individual system scores are then averaged to provide a single O&M score for use in SDS. A description of the current rating criteria is attached for your reference.

The new methodology proposed by IHS for determining the O&M score to be used in SDS involves the continued use of these physical surveys. However, the scores that are used in SDS will be derived from an evaluation of each utility organization based on a defined set of scoring criteria. Separate score sheets will be used to rate the O&M capability of each utility organization for water, sewer, and solid waste. The scoring factors within each score sheet are grouped into the broad categories of "Operation", "Compliance", and "Budget and Organization". The individual questions and the weight given to each category vary with the type of system (water, sewer, or solid waste). The O&M score used in SDS will

be based on the organization's O&M score for the type of system proposed by each project. In the case of combined projects (i.e. water and sewer), the organization's O&M scores will be prorated based on the project cost for each type of system. Whereas the existing methodology emphasizes the health of each individual system, the proposed methodology emphasizes the health of the utility as a whole. Copies of the proposed new score sheets, including scoring guidance, are attached for your review.

Since approximately 1998 EPA has utilized the SDS project list to fund projects through the Safe Drinking Water Act (SDWA) and Clean Water Act (CWA) tribal set aside programs. IHS continues to use the SDS priority list as the basis for funding projects to correct sanitation deficiencies for existing homes. The SDS project list is generated, in part, from the IHS annual operation and maintenance (O&M) surveys. It is anticipated that some SDS projects may see a significant change in their O&M score resulting from these changes based on a preliminary analysis of a few selected organizations, though the exact changes are difficult to predict. However, it is anticipated that these effects will be generally uniform across all Bemidji Area Tribes.

If possible, please take a moment to review the attached scoring sheets with your utility director and consider any comments, concerns, or objections you may have with implementing the O&M scoring methodology currently under consideration. It is hoped that by adopting this new methodology a more objective and consistent scoring system will result; a system that promotes and supports sustainable Tribal O&M organizations. Please send your comments or concerns to the following by February 28, 2011.

CDR Scott R. Snell
Bemidji Area Indian Health Service
Office of Environmental Health and Engineering
522 Minnesota Avenue, Fed Building Rm 216
Bemidji, MN 56601

If you have any questions regarding any of the information presented in this letter, please contact Mr. Scott Snell at 218-444-0502. He can provide any assistance you may need regarding the implications of the proposed changes described in this letter.

Sincerely,

Craig S. Morin

Craig Morin, Director DSFC
Bemidji Area Indian Health Service

Attachments (4)

cc: Louis Erdrich, Associate Area Director
Dan Tadgerson, Tribal Utility Consultant
Scott Snell, Asst. Director, DSFC
Arlan Frisvall, Keweenaw Bay

SYSTEM RATING:	14
UTILITY NAME	Keweenaw Bay Maintenance
SYSTEM NAME	Kawbawgam Road
IRVEY TYPE:	ANNUAL
URVEY DATE:	5/25/2011
SurveyorNames:	Mark VanLinden Oji
PWSID#:	55293303
SanFac Code:	1152260693
SYSTEM TYPE:	Community
ADDRESS1	Carl Rassenin
ADDRESS2	220 North Main
CITY	Baraga
STATE ZIP	MI 49908
COUNTY	Marquette
TELEPHONE	(906) 353-7117
FAX	(906) 353-7623
EMAIL	carl@oha.com
OPERATOR	Mark VanLinden
MANAGER	Matthew Keniston

CERT OPERATOR	no
CERT CLASS	S-4
SYSTEM CLASS	C
# RES CONNECTIONS:	40
# OTHER CONNECTIONS:	2
# WATER METERS(Res)	40
# WATER METERS(other):	2

POPULATION SERVED

Res Pop	140	NT Pop:	0
Indian Pop:	140	T Pop:	0

PLANT CAP 12 HR (GPD)	30,240
AVE PROD (GPD)	6,400
MAX PROD (GPD)	9,000

Sampling	Last Done	Next Due
IOC'S:		2012
VOC'S:	7/16/2008	2011
SOC'S:	6/18/2008	2013
NITRATE:	7/21/2010	2011
Pb Cu:	9/27/2009	2012
Rad's:	7/1/2003	2016

TREATMENT CONSTRUCTED	1/1/1990
# TREATMENT PLANTS	1
TYPE OF CHLORINE:	Liquid
AVE FREE RESIDUAL	0.1
MONITOR FREQ:	Daily
MONITOR LOC	house and sy
CONTACT TIME:	12
SPARE PARTS AVAIL?:	yes
MANUFACTURER:	Tonka
FILTRATION:	Pressure
PRE CHLORINATION?:	yes
BACKWASH FREQ:	ssue diff
ADEQUATE SAMPLE TAP?:	yes
BYPASS AVAILABLE:	yes
OTHER:	NONE
FLUORIDE:	Saturator
FI Equip Installed	☑
FI Equip Operational?	☐
FI Monitoring	☐
Fluoride Policy	None

WATER SOURCE: Groundwater	Well #1	Well #2	Well #3	Well #4
CURRENT PUMPING RATE(gpm):	42	46		
METER READING:	41187200	42683100		
PUMP RUN HRS:	4273	4638	262	
PUMP STARTS:	4848	4684	409	
WELL LOG AVAILABLE?	yes	yes		

WATER QUALITY	**RAW**	**TREATED**
pH:		
Hardness(ppm):		115
Iron(ppm):	0.60	0.15
Manganese(ppm):		0.88

DISTRIBUTION	
Pipe Type:	PVC
Main Flushing Freq:	2 times /ye
All Hydrants Operational?:	no
All Valves Operational?:	yes

NEAREST:	
WATER SUPPLY	Harvey Township
CONTAM'T SOURCE:	home septic tank 75 ft.
OBSERVATIONS:	

Water Storage Type:	Hydro Tank
VOLUME(gals):	1,450
ElectricMeter#:	23 213 079
ElecMeterreading	47,975

As_builts Current:	yes
Tribally Subsidized?:	yes
Collection Rate(%):	100.0%
Adequate budget?:	yes
Water Rate per month(Res):	$20.00
Utility Ordinance:	Yes
Scheduled Maintenance:	Yes
Emergency Plan:	No
Cross Connection Plan:	No
SWPP?:	Yes
SDWA Compliant?:	yes
If No, Explain:	
LAST EDITED:	

GENERAL

Recent improvements to the system include a new, smaller chlorine pump to lower the chlorine dosage to address Disinfection By-product concerns and the repair of a water leak in the pumphouse 6-inch interior piping.

The residential population was based on 40 residential connections with an assumed population of 3.5 residents per connection.

The general housekeeping of the facility is good.

The Utility utilizes a written maintenance schedule.

The Utility charges for water at a flat rate of $20.00/month up to 20,000 gallons per month. Water used in excess of 20,000 gallons per month is billed at $5.00 per 1000 gallons.

The remaining Utility expenses are subsidized by the Tribal Government.

POTENTIAL SIGNIFICANT DEFICIENCIES

:ording to the USEPA's list of Significant Sanitary Survey Deficiencies, the following items are considered potential significant deficiencies:
Vell must be vented with a screened opening that is turned down to reduce the chance of allowing contaminants into the water supply. This deficiency can be corrected by the installation of a vented and sealed well cap on Well #2.

* Well must be grouted to reduce the vulnerability to surface water contamination. This deficiency can be corrected by the construction of a suitable

concrete pad or the replacement of Well #1.

* A smooth bore sample tap is required at the well head for compliance sampling. This deficiency can be corrected by the installation of smooth bore sample taps on each well line prior to treatment in the pumphouse.

WATER SOURCE (WELLS)

The system is served by (2) groundwater wells.

Well #1
Pumping Rate = 42 gpm @ 62 psi
Pump Size: 3 Hp
Casing Height = 30"
Grading around the well is good and drainage is away from the casing.
The well cap is sealed and vented.
There is not a well security box for the well.
The electrical conduit is secure and in good condition.

Well #2
Pumping Rate = 46 gpm @ 58 psi
Pump Size: 3 Hp
Casing Height = 13"
Grading around the well is good and drainage is away from the casing.
The well cap is sealed but not vented.
There is not a well security box for the well.
The electrical conduit is secure and in good condition.

The well logs indicate Well #1 is not grouted per the well construction code.

The nearest source of contamination is the backwash pit which is located ~50 yards from the well.

According to the USEPA database, a Source Water Protection Plan was completed in conjunction with the USGS and was approved on 11/4/2003.

WATER TREATMENT (PUMPHOUSE)

The pumphouse is a single room, single block wall building with an external hydro-pneumatic tank. Water treatment includes iron removal and disinfection. Each Tonka Filter is rated at 40 gpm.

The twelve hour plant capacity is based on 42 gpm for 12 hours (represents the pumphouse production capacity for 12-hours with the largest well out of service).

The Average Production Day was approximately 6,400 gpd and was based on water meter readings in the pumphouse.

The Maximum Production Day was approximately 9,000 gpd and was based on utility records. The high usage was due to backwashing of the filter. This would require both pumps to run approximately 1.7 hours.

There are no sample taps on either well line.

There is a check valve in each well line in the interior pumphouse piping.

The water service line for the pumphouse is unmetered.

The well pumps are controlled by water level probes in the hydro-pneumatic tank.

One pump runs at a time but both pumps run each cycle. When the water level in tank reaches a certain height, the lead pump shuts off and the lag pump turns on.

The operator backwashes the filter 1x/month. The backwash rate is 200 gpm. There is no backwash meter to monitor the volume of water used to backwash the iron filter.

The operator reported the iron concentration in the raw water has increased from 0.3 mg/L to 1.0 mg/L. This could be due to the recent rains. He also noted the free chlorine residual normally runs 0.8 ppm but due to the increased iron in the source water, has decreased to 0.09 ppm in the finished water.

Well #1 averaged 1.2 hours per day of run time (12 minutes per cycle) since the 2010 Survey.

Well #2 averaged 1.3 hours per day of run time (13 minutes per cycle) since the 2010 Survey.

The pumphouse is heater by a natural gas heater with portable electric back-up heaters.

The site is not fenced but the facilities are secure and well maintained.

The Pumphouse used approximately 3,805 kwh of energy since the 2010 survey or approximately 13.3 kwh/day.

There is a potential cross connection on the backwash line for the filters.

The address for the pumphouse is 103 Keweenaw Trail.

CHEMICAL FEED:

The raw water from the wells is disinfected prior to distribution.

Chlorine (Sodium Hypochlorite):
LMI pump: Model A841-910HI; Max output = 0.25 gph; speed/stroke = 75/65
5-gallons of 12.5% chlorine solution are mixed with 3-gallons of water prior to injection.
The 35 gallon chemical vat is not scaled and does not have a spill containment system.
The Utility targets a free chlorine residual of 0.1 mg/L at the Community Center.

The bulk chlorine is NSF approved.

The pumphouse facility does not have an eyewash station or emergency shower.

The ventilation fan is operational.

The operator reported there have been no odor or taste problems.

The facility has the proper test kits.

The flow switches are properly located and are functional.

There is no spill containment for the chemicals.

DISTRIBUTION:

All of the water services are metered and read on a monthly basis. Residents are charged based on the amount of water they use.

The average water consumption since the 2010 Survey was approximately 160 gpd per residential connection. This average does not separately account for water usage for non-residential connections.

The "Other" connections include the Pumphouse and the Community Building.

There is a written hydrant flushing plan for this water system. The Utility reported the system is flushed 2 times/year and was last flushed in the Fall of 2010.

The hydrants and gate valves are exercised 2 times/years. All valves are operational. (1) hydrant is not operational due to a stripped operator nut.

The Utility did not experience any water main breaks for this system since the 2010 Survey.

The Utility has paper copy as-builts for this water system.

There have not been any pressure complaints for the system. The operator reported that there have been some recent complaints regarding iron in water.

WATER STORAGE:

The storage tank is a hydro-pneumatic air/water tank manufactured by Tonka - 1992 (SN92183).
Volume: 6500 gallon; 1450 usable
High pressure safety setting: 78 psi
All equipment is operational

COMPLIANCE:

Based on an Annual Compliance Report from the EPA for 2010, the Kawbawgam Rd Water System had a Nitrate monitoring violation for 2010 with no return to compliance date.

TTHM's and HAA5's sampling was completed on 7/21/10.

Most recent Consumer Confidence Report was dated June 2010.

SAFETY:

Safety equipment available in the pumphouse includes an apron, face shield and rubber gloves.

The safety chain for the chemical feed injector was not connected.

There are no chemical warning placards posted on the exterior of the building for the chlorine inside.

SUGGESTIONS

Recommend installing a sealed and vented cap for Well #2.

Recommend installing smooth bore sample taps on each well line at a minimum of 8-inches above the floor.

Recommend construction of a suitable concrete pad or the replacement of Well #1.

Recommend correcting the potential cross connection in the backwash piping.

Recommend sampling the iron filter media to determine the "health" of the iron filter.

Recommend installing an eyewash/emergency shower with tempered water.

Recommend repairing the inoperable hydrant.

Recommend installing a safety cable/chain for the chemical feed injector.

Recommend posting chemical placards on the exterior of the building to alert fire/rescue personnel of the chemical hazards contained within the building.

SYSTEM RATING:	14	CERT OPERATOR	yes	**TREATMENT CONSTRUCTED**	6/1/1987
UTILITY NAME	Keweenaw Bay Maintenance	CERT CLASS	S	# TREATMENT PLANTS	1
SYSTEM NAME	Zeba	SYSTEM CLASS	C	TYPE OF CHLORINE:	Liquid
IRVEY TYPE:	ANNUAL	# RES CONNECTIONS:	113	AVE FREE RESIDUAL	0.45
URVEY DATE:	5/25/2011	# OTHER CONNECTIONS:	3	MONITOR FREQ:	uously and w
SurveyorNames:	Arlan Friisvall of the	# WATER METERS(Res)	113	MONITOR LOC	Varies
PWSID#:	55293302	# WATER METERS(other):	2	CONTACT TIME:	20 min
SanFac Code:	1152260689	**POPULATION SERVED**		SPARE PARTS AVAIL?:	yes
SYSTEM TYPE:	Community	Res Pop 395	NT Pop: 0	MANUFACTURER:	ter - Wallace & Ti
ADDRESS1	Arllan Friisvall	Indian Pop: 395	T Pop: 0	FILTRATION:	Pressure
ADDRESS2	107 Bear Town Roa	PLANT CAP 12 HR (GPD)	15,840	PRE CHLORINATION?:	no
CITY	Baraga	AVE PROD (GPD)	18,800	BACKWASH FREQ:	ually by ti
STATE ZIP	MI 49908	MAX PROD (GPD)	42,300	ADEQUATE SAMPLE TAP?:	yes
COUNTY	Baraga			BYPASS AVAILABLE:	yes
TELEPHONE	(906) 353-6623			OTHER:	NONE
FAX	906 353-7540			FLUORIDE:	Saturator
EMAIL	tmaint@up.net			FI Equip Installed	☑
OPERATOR	Kerry Picciano			FI Equip Operational?	☑
MANAGER	Arlan Friisvall			FI Monitoring	☑
				Fluoride Policy	None

Sampling	Last Done	Next Due
IOC'S:	9/13/2010	2011
VOC'S:	9/13/2010	2011
SOC'S:	9/13/2010	2011
NITRATE:	9/13/2010	2011
Pb Cu:	9/14/2008	2011
Rad's:	12/20/2007	2016

WATER SOURCE: Surface Water	Well #1	Well #2	Well #3	Well #4
CURRENT PUMPING RATE(gpm):	33	22		
METER READING:	56071000			
PUMP RUN HRS:	8637	9320		
PUMP STARTS:	23265	7421		
WELL LOG AVAILABLE?	NA	NA		

WATER QUALITY	**RAW**	**TREATED**
pH:		
Hardness(ppm):		
Iron(ppm):		0.00
Manganese(ppm):		

DISTRIBUTION	
Pipe Type:	PVC & AC
Main Flushing Freq:	Twice a yea
All Hydrants Operational?:	yes
All Valves Operational?:	yes
Water Storage Type:	Elevated
VOLUME(gals):	65,000
ElectricMeter#:	UPPCO 811 050
ElecMeterreading	

As_builts Current:	Yes
Tribally Subsidized?:	Yes
Collection Rate(%):	100.0%
Adequate budget?:	yes
Water Rate per month(Res):	$30.00
Utility Ordinance:	Yes
Scheduled Maintenance:	Yes
Emergency Plan:	Yes
Cross Connection Plan:	Yes
SWPP?:	Yes
SDWA Compliant?:	Yes
If No, Explain:	
LAST EDITED:	

NEAREST:
WATER SUPPLY: Lanse'
CONTAM'T SOURCE: Bay Area Water Shed

OBSERVATIONS:

GENERAL

The Utility recently purchased repair parts for the PVC water main, for fire hydrants and extra valves. This summer they plan on repairing (2) hydrants and several curb stops.

The residential population was based on 113 residential connections with an assumed population of 3.5 residents per connection.

The general housekeeping of the facility is good.

The Utility utilizes a written maintenance schedule.

The Utility charges for water at a flat rate of $30.00/month.

Utility expenses in excess of the income generated from the water rates are subsidized by the Tribal Government.

POTENTIAL SIGNIFICANT DEFICIENCIES

According to the USEPA's list of Significant Sanitary Survey Deficiencies, the overflow pipe must have a screen or flap gate. This deficiency can be corrected by the installation of a screen or flap gate on the overflow pipe.

WATER SOURCE (SURFACE WATER)

This system draws water from the Keweenaw Bay of Lake Superior.

Intake Pump #1
Pumping Rate = 68.5 gpm @ 69 psi
Pump Size: 3 Hp

Intake Pump #2
Pumping Rate = 68.5 gpm @ 69 psi
Pump Size: 3 Hp

Distribution Pump #1
Pumping Rate = 57 gpm @ 137 psi
Pump Size: 10 Hp

Distribution Pump #2
Pumping Rate = 57 gpm @ 137 psi
Pump Size: 10 Hp

The nearest source of contamination is a residential septic tank approximately 75 feet from the facility.

According to the USEPA database, a Source Water Protection Plan was completed in conjunction with the USGS and was approved on 2/6/2004.

WATER TREATMENT (PUMPHOUSE)

The pumphouse is a three room, single block wall building. The water is treated by a US Filter membrane filtration system. Water is filter, disinfected, fluoride is added and the water is then pumped to a 12,000 gallon contact chamber. Transfer pumps pump the water from the contact chamber to the elevated storage tank for distribution.

The twelve hour plant capacity is based on 22 gpm for 12 hours and represents the pumphouse production capacity for 12-hours with the largest intake pump out of service.

The following meter readings were recorded from the Daily Report during the 2011 Survey:
Raw Water Meter: 76,850,000 gallons
Finished Water Meter: 56,071,000 gallons

The Average Production Day since the 2010 Survey was approximately 18,800 gpd and was based on the finished water meter readings in the pumphouse.

The Maximum Production Day is to be approximately 42,300 gpd and is based 2.25x the Average Production Day. The high usage was due to backwashing of the filter. This would require both intake pumps to run approximately 12.8 hours.

There is a sample tap on the intake line installed 10" above the floor.

There is not a check valve in the intake line in the interior pumphouse piping.

The water service line for the pumphouse is unmetered.

The intake pumps are controlled by water level in the contact chamber. The distribution pumps are controlled by a pressure switch which monitors the pressure in the water system.

Each filter skid is rated at 60 gpm. The intake pumps run at approximately 22 gpm and 33 gpm.

The filters backwash based on differential pressure. Each filter will backwash for 45 minutes.

Intake Pump #1 averaged 3.2 hours per day of run time (2.2 minutes per cycle) from 5/25/2011 to 8/11/2011.

Intake Pump #2 averaged 3.1 hours per day of run time (2.2 minutes per cycle) from 5/25/2011 to 8/11/2011.

Distribution Pump #1 averaged 2.5 hours per day of run time (68 minutes per cycle) from 5/25/2011 to 8/11/2011.

Distribution Pump #2 averaged 3.1 hours per day of run time (84 minutes per cycle) from 5/25/2011 to 8/11/2011.

The pumphouse is heater by a gas heater with portable electric back-up heaters.

The site is not fenced but the facilities are secure and well maintained.

The address for the pumphouse is 15614 Pequaming Road.

CHEMICAL FEED:

The raw water from the surface water intakes is disinfected prior to distribution.

Chlorine (Sodium Hypochlorite):
W&T pump: Model P75MEH3MAVUC9AXX; Max output = 0.87 gph; speed/stroke = 100/95
4-gallons of 10% chlorine solution are mixed with 16-gallons of water prior to injection.
The 55 gallon chemical vat is not scaled and does not have a spill containment system.
The Utility targets a free chlorine residual of 1.2 mg/L from the analyzer.

The bulk chlorine is NSF approved.

Fluoride (Sodium Fluoride):

W&T pump: Model P75MEO2MAKDCIA6X; Max output = 0.45 gph; speed/stroke = 100/70
The 55 gallon chemical vat is not scaled and does not have a spill containment system.
The Utility targets a fluoride concentration of 1.1 mg/L from the analyzer.

The fluoride NSF approved.

e natural fluoride level in the raw water is 0.18 mg/L. the Utility routinely performs slit samples with the City of Baraga.

There are automatic analyzers for chlorine and fluoride. The fluoride analyzer will shut off the fluoride chemical feed pump if the fluoride concentration exceeds 1.1 mg/L

The pumphouse facility does not have an eyewash station or emergency shower.

The ventilation fan in the chemical feed room is operational.

The operator reported there have been no odor or taste problems.

The facility has the proper test kits.

The flow switches are properly located and are functional.

There is no spill containment for the chemicals.

DISTRIBUTION:

All of the water services are metered but are not read on a monthly basis. Residents are charged based on a flat rate.

The average water consumption since the 2010 Survey was approximately 166 gpd per residential connection. This average does not separately account for water usage for "Other" connections.

"Other" connections include the Head Start, Community Building and the Pumphouse.

There is a written hydrant flushing plan for this water system. The Utility reported the system is flushed 2 times/year and was last flushed in the Fall of 2010.

The hydrants and gate valves are exercised 2 times/years. All valves are operational. (1) hydrant is inoperable and (1) hydrant leaks.

The Utility did not experience any water main breaks for this system since the 2010 Survey.

The Utility has paper copy as-builts for this water system.

ere is (1) pressure reducing valve in the distribution system. The discharge pressure is set at 70 psi.

There have not been any pressure or water quality complaints for the system.

WATER STORAGE:

The storage tank is a standpipe.
Volume = 67,600 gallons
Tank is 12' diameter x 80' high
Electric Meter No. - 17-237-035; Reading = 8,480 kWH
Caged ladder climbing system
The overflow pipe is not screened.
The site is fenced and maintained. The fence is damaged and should be repaired.
The splash pad is in good condition.
The tank was last inspected 5-years ago and included a dive inspection.
The tank insulation is in poor condition and has been damaged by woodpeckers.
The exterior coating is in poor condition and needs to be repaired.

COMPLIANCE:

Based on an Annual Compliance Report from the EPA for 2010, there were no violations reported for the Zeba Water System.

TTHM's and HAA5's sampling was completed on 9/13/10.

Most recent Consumer Confidence Report was dated June 2010.

SAFETY:

Safety equipment available in the pumphouse includes an apron, face shield and rubber gloves.

There are no chemical warning placards posted on the exterior of the building for the chlorine inside.

SUGGESTIONS

Recommend installing a screen or flap gate on the overflow pipe to address the EPA Potential Significant Deficiency.

commend repairing the fence around the stand pipe.

Recommend repairing the insulation, exterior coating system and the fence for the standpipe.

Recommend posting chemical placards on the exterior of the building to alert fire/rescue personnel of the chemical hazards contained within the building.

Recommend repairing the inoperable hydrant and the leaking hydrant.

Recommend reading the residential and commercial water meters on a monthly basis and analyze the data to calculate water loss in the system.

Recommend installing an eyewash/emergency shower with tempered water.

SYSTEM RATING	14	As_builts Curren	Yes	EffluentPH	0
UTILITY NAME	Keweenaw Bay Maintenanc	NPDES Compliant?:	Yes	EffluentBOD	0
'STEM NAME	Zeba	All Valves Operational?	Yes	EffluentTSS	0
SurveyorNames:	Arlan Friisvall of the Keweenaw Bay Maintenance Department and Drian Willoughby and Shane Hoffmann of the Indian Health Service	How often exercised?	Not sure	EffluentAmmonia	0
SURVEY DATE	5/25/2011	Manholes and lines clean?:	Yes		
NPDES#	NA	Pipe Material Type(s)	Asbestos cement, PV	Sewer Rate per month(Res)	$38.00
SanFac Code	1152280688	DATE CONSTRUCTED	6/1/1965	Sewer Rate per month(Com)	$38.00
SYSTEM TYPE	Collection			# RES CONNECTIONS	117
SYSTEM DESIGN CAPACITY(GPD)	127,000			# OTHER CONNECTIONS	3
County:	Baraga	LAST UPDATED	8/19/2009	ESTIMATED POP	400
SURVEY TYPE	ANNUAL				
SYSTEM CLASS	D				

OBSERVATIONS:

The community is served by a conventional gravity collection system with one lift station. The wastewater is pumped to City of L'Anse for treatment.

Most of the collection system was constructed in 1965.

Paper as-builts are available for some of the collection system.

The Utility maintains a stock of some repair parts for the collection 'tem.

SUGGESTIONS:

Recommend labeling the wet well and valve vault as confined spaces. Consider doing this by making a stencil and painting on the message to reduce cost.

Recommend troubleshooting and repairing the controller for the lift station pumps.

Recommend contracting a local septic hauler to stop by the lift station and clean the trash basket on regular basis.

NOTES:

Lift stations

Liftstation ID	1	CURRENT PUMPING RATE(gpm)	150	# RES CONNECTIONS	117
SURVEY DATE	5/25/2011	Date Pumps last Calibrated	unknown	# OTHER CONNECTIONS	3
System name:	Zeba	All Valves Operational?	Yes	ESTIMATED POP	400
LIFT STATION TYPE	Submersible	How often exercised?	annual	DATE CONSTRUCTED	
DIAMETER(FT)	8	SPARE PARTS AVAILABLE	yes		
Electricmeter#:	811048	Grease Problems?:	minor		
Electric meter reading	79119	BackupEnergy	Mobile		

OBSERVATIONS:

The number noted in column #3 are for combined operation of the pumps.

The flow meter reading was 91,638,668 gallons.

At the time of the 2011 Survey, the pump discharge was as follows:
Pump #1 = 123 gpm (mixer)
Pump #2 = 192 gpm

The average run time for Pump #1 and Pump #2 was 8.0 minutes per cycle and 6.3 minutes per cycle respectively.

The average starts for Pump #1 and Pump #2 was 16 starts per day and 6 starts per day respectively.

Based on this information, it is evident the alternator for the pumps 'ot functioning properly. The operator noted he was alternating pump operation manually.

This station has emergency bypass piping in the valve vault but the Utility does not have a portable pump to utilize the bypass.

	#1	#2	#3
PUMP RUN HR	6560	4946	1715
PUMP STARTS	105168	82272	31694

The trash basket is full and needs to be cleaned. The Utility does not have a place to dump the waste from the basket.

e site is not fenced but is well maintained

SUGGESTIONS:

consider a yard hydrant at the lift station.

NOTES: